U.S.S.N. 10,797,315

Claim Amendments

Please amend claims 1, 2, 4, 5, 7-9, 11, 13, 15, and 17-20 as follows:

Please cancel claims 2, 6, 12, 14, and 16 as follows:

Please add new claim 21 - 25 as follows:

Claims as Amended

1. (currently amended) A method for forming and delivering a mixed slurry for use in a chemical mechanical polishing operation, said method comprising the steps of:

delivering a first slurry for use in a chemical mechanical polishing operation;

delivering a second slurry for use in a chemical mechanical polishing operation;

mixing said first slurry with [[a]] said second slurry to provide [[a]] at least one mixed slurry thereof, said mixing carried out according to at least one of in-line mixing and pre-

mixing in a mixing tank to provide an adjustable mixing ratio of said mixed slurry comprising said first and second slurry; and

then delivering said mixed slurry according to a controlleding ~~a~~ flow rate ~~and a mixing ratio associated with said mixed slurry, thereby providing an accurate control of said flow rate and adjustable mixing ratios thereof for use in enhancing~~ to chemical mechanical polishing operations utilized in the fabrication of semiconductor devices.

2. (currently amended) The method of claim 1 wherein the step of mixing said first slurry with said second slurry ~~to provide a mixed slurry, further~~ comprises ~~the step of~~:

mixing said first slurry with said second slurry in-line ~~to provide a mixed slurry thereof~~ wherein said mixing ratio is adjusted by controlling respective flow rates of said first and second slurry.

3. (cancelled)

4. (currently amended) The method of claim 1 wherein said mixing ratio ~~the step of mixing said slurry with said second slurry, further the step of:~~

is adjusted by pre-mixing a pre-determined amount of said first slurry with a pre-determined amount of said second slurry in a pre-mixing tank prior to delivery to ~~provide a mixed slurry~~ thereof said chemical mechanical polishing operations.

5. (currently amended) The method of claim 4 ~~further comprising the step of:~~ wherein ~~adjusting~~ said mixing ratio is adjusted by measuring a weight of at least one of said first and second slurry.

6. (cancelled)

7. (currently amended) The method of claim 4 ~~further comprising the step of:~~ wherein ~~adjusting~~ said mixing ratio is adjusted by adjusting a weight of said first slurry and a weight of said second slurry.

8. (currently amended) The method of claim 4 wherein said steps of mixing and delivering further comprising ~~the steps of~~:

~~pre-mixing said first slurry and said second slurry in a pre-mixing tank to provide said mixed slurry,~~ measuring a weight of said first and second slurry ~~wherein said pre-mixing tank is~~ associated with according to at least one load cell comprising said pre-mixing tank to control said mixing ratio;

controlling said flow rate of said mixed slurry delivered from said pre-mixing tank to a chemical mechanical polishing device utilizing a slurry pump associated with said pre-mixing tank; and

thereafter delivering said mixed slurry to said chemical mechanical polishing device.

9. (currently amended) The method of claim 1 wherein the step of mixing said first slurry with said second slurry[[,]] ~~further~~ comprises ~~the step~~:

mixing said first slurry with said second slurry in-line to provide a first mixed slurry thereof for delivery to a first chemical mechanical polishing operation; and

pre-mixing said first slurry with said second slurry to provide a second mixed slurry thereof for delivery to a second chemical mechanical polishing operation.

10. (original) The method of claim 1 further comprising the step of:

delivering said first slurry from a first supply tank linked to at least one circulation pump, wherein said circulation pump is operable in association with at least one slurry pump; and

delivering said second slurry from a second supply tank connected to at least one circulation pump, wherein said second supply tank is operable in association with at least one slurry pump; and

wherein said first and second supply tanks are operable in association with at least one valve.

11. (currently amended) A system for forming and delivering a mixed slurry for use in a chemical mechanical polishing operation, said system comprising:

a first slurry for use in a chemical mechanical polishing operation;

a second slurry for use in a chemical mechanical polishing operation;

at least one mixing mechanism for mixing said first slurry with [[a]] said second slurry to provide at least one mixed slurry thereof, said at least one mixing mechanism selected from the group consisting of in-line mixing and pre-mixing in a mixing tank, said at least one mixing mechanism for providing an adjustable mixing ratio of said first and second slurry; ~~and~~

at least one control mechanism for controlling at least one of a flow rate and an amount provided to said at least one mixing mechanism of said first and second slurry to adjust said mixing ratio; and,

a second control mechanism for controlling a flow rate of said at least one mixed slurry for delivery to [[,]] ~~and mixing ratio associated with said mixed slurry, thereby providing an accurate control of said flow rate and adjustable mixing ratio~~

~~thereof , for use in enhancing~~ chemical mechanical polishing operations utilized in the fabrication of semiconductor devices.

12. (cancelled)

13. (currently amended) The system of claim [[12]] 11 wherein said control mechanism ~~permits~~ adjusts said mixing ratio ~~to be adjusted~~ by controlling said flow rate of said first and second slurry according to said in-line mixing.

14. (cancelled)

15. (currently amended) The system of claim [[14]] 11 wherein said control mechanism adjusts said mixing ratio ~~is adjustable~~ by measuring a weight of at least one of said first and second slurry according to said in-line mixing.

16. cancelled

17. (currently amended) The system of claim [[14]] 11 wherein said control mechanism adjusts said mixing ratio ~~is adjustable~~ by adjusting a weight of said first slurry and a weight of said second slurry according to pre-mixing in a mixing tank.

18. (currently amended) The system of claim 11 [[14]] wherein[[:]]

said ~~pre-mixing mechanism further comprises a~~ pre-mixing tank ~~for pre-mixing said first slurry and said second slurry to provide said mixed slurry, such that said pre-mixing tank is associated~~ with comprises at least one load cell to control said mixing ratio; and

said flow rate of said mixed slurry ~~delivered from said pre-mixing tank to a chemical mechanical polishing device~~ is controllable utilizing a slurry pump associated with said pre-mixing tank.

19. (currently amended) The system of claim 11 wherein said at least one mixing mechanism ~~further~~ comprises both:

an in-line mixing mechanism for mixing said first slurry with said second slurry in-line to provide a first mixed slurry thereof for delivery to a first chemical mechanical polishing operation; and

a pre-mixing in a mixing tank mechanism for pre-mixing said first slurry with said second slurry to provide a second mixed slurry thereof for delivery to a second chemical mechanical polishing operation.

20. (currently amended) The system of claim 11 wherein said ~~delivery mechanism further comprises~~ first and second slurry are provided according to:

a first supply tank for delivering said first slurry, wherein said first supply tank is linked to at least one circulation pump, such that said circulation pump is operable in association with at least one slurry pump;

a second supply tank for delivering said second slurry, wherein said second supply tank is connected to at least one circulation pump, such that said second supply tank is operable in association with at least one slurry pump; and

wherein said first and second supply tanks are operable in association with at least one valve.

21. (new) A method for forming and delivering mixed slurries for use in a chemical mechanical polishing operations, said method comprising the steps of:

delivering a first slurry for use in chemical mechanical polishing operations;

delivering a second slurry for use in chemical mechanical polishing operations;

mixing said first slurry with said second slurry comprising an adjustable mixing ratio according to in-line mixing to provide a first mixed slurry thereof;

mixing said first slurry with said second slurry comprising an adjustable mixing ratio according to pre-mixing in a mixing tank to provide a second mixed slurry thereof; and,

controllably delivering said first and second mixed slurry to a respective first and second chemical mechanical polishing operation.

22. (new) The method of claim 21 wherein said mixing ratio of said first mixed slurry is adjusted by controlling respective flow rates of said first and second slurry prior to delivery to said second chemical mechanical polishing operation.

23. (new) The method of claim 21 wherein said mixing ratio of said second mixed slurry is adjusted is adjusted by pre-mixing a pre-

determined amount of said first slurry with a pre-determined amount of said second slurry prior to delivery to said second chemical mechanical polishing operation.

24. (new) The method of claim 23 wherein said mixing ratio is adjusted by measuring a weight of at least one of said first and second slurry.

25. (new) The method of claim 21 wherein said mixing ratio of said second mixed slurry is adjusted is adjusted by adjusting a weight of said first slurry and a weight of said second slurry.